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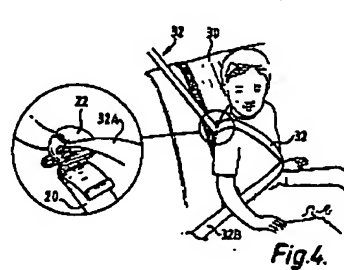
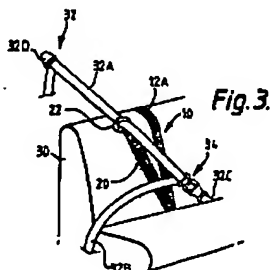
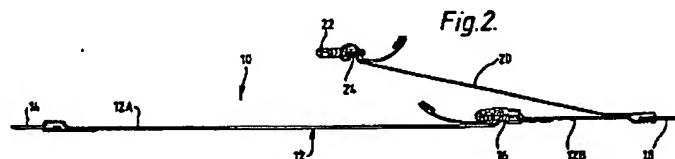
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None

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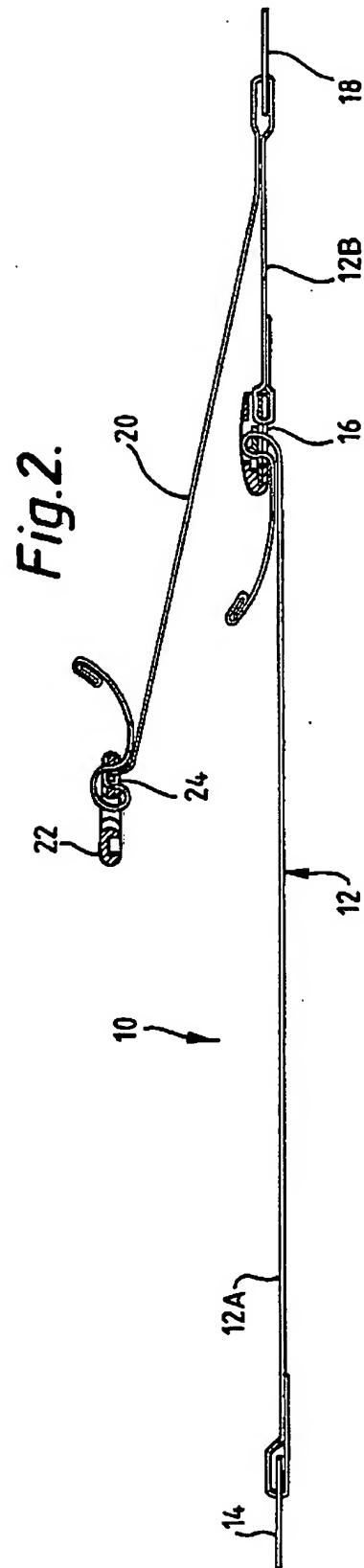
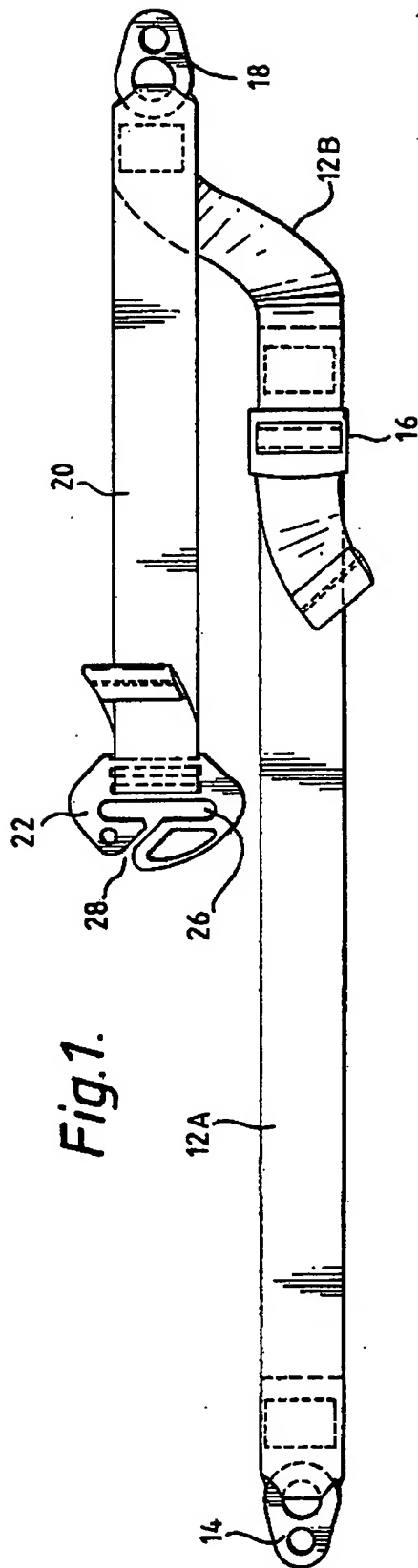
(54) Seat belt adjuster

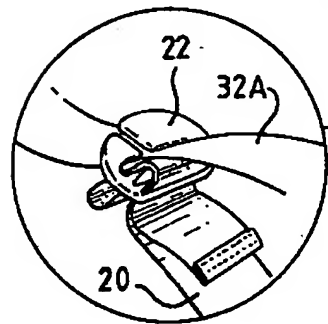
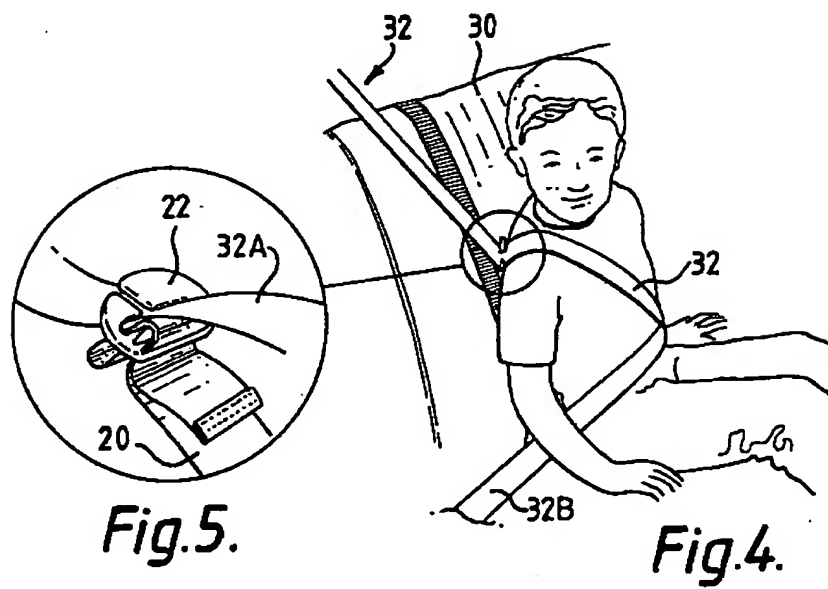
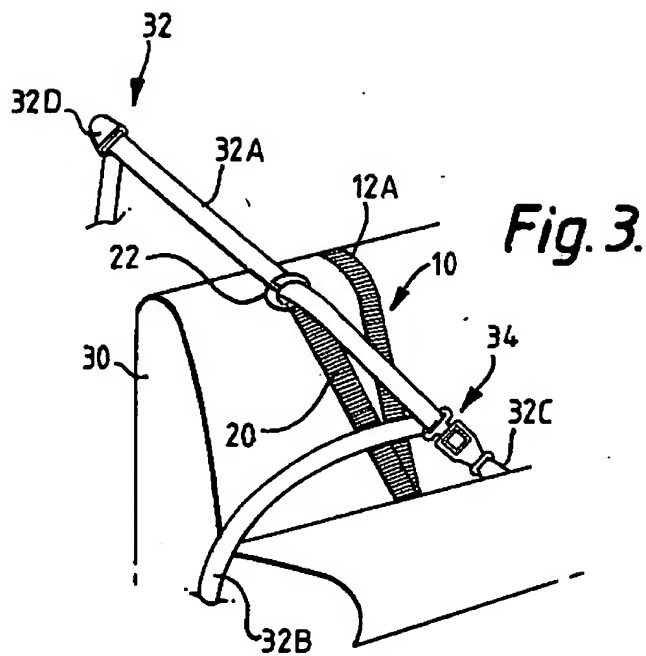
(57) An adjustable belt (10) for use with a vehicle three point vehicle safety belt to adjust the position of the shoulder portion (32A) of the safety belt comprises a first adjustable length (12) attached between two anchor brackets (14) and (18) and a second adjustable length (20) attached to the anchor bracket (18). The second adjustable portion (20) terminates in a guide clip (22) which can be attached to the shoulder belt portion (32A) of the three point safety belt to adjust the position of the shoulder belt with respect to the wearer. The first adjustable length (12) is useful to restrain collapse of the seat of the vehicle.



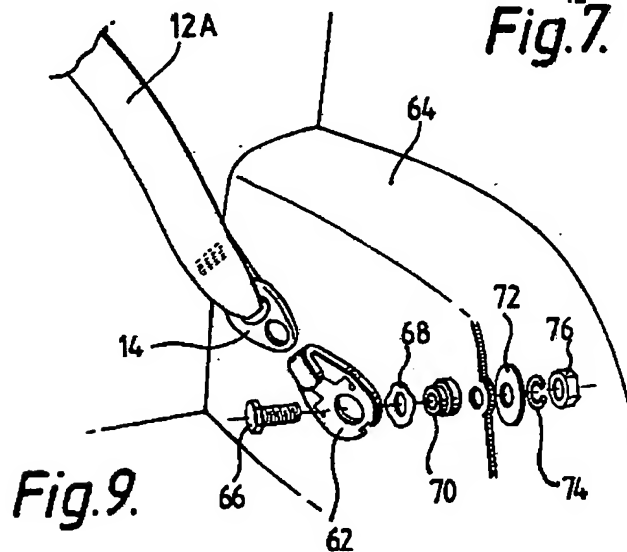
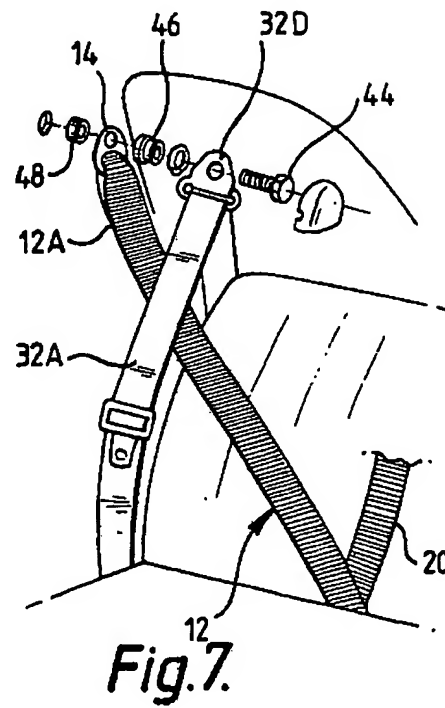
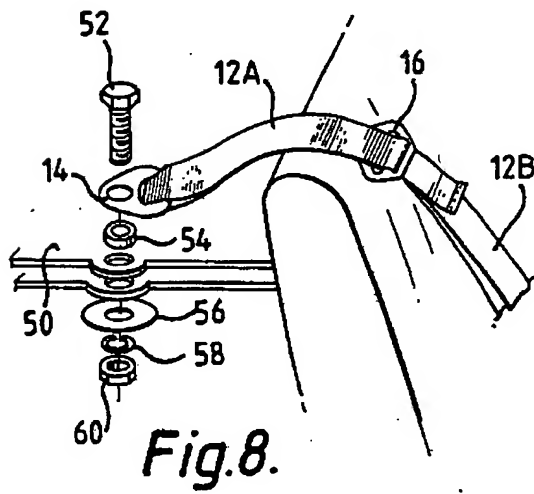
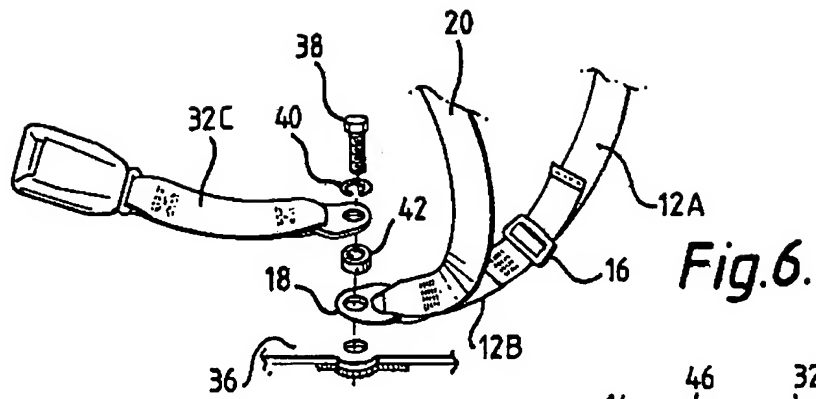
At least one drawing originally filed was informal and the print reproduced here is taken from a later filed formal copy.

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VEHICLE SAFETY BELTS

This invention relates to safety belts for vehicles, in particular though not exclusively to seat belts which are or can be fitted to the rear seats of vehicles. The invention can be applied to both automatic and static seat belts.

Automatic safety belts commonly comprise a first belt attached at one end to a belt retractor and at the other end to a bracket which is secured to an anchorage point on the vehicle, the belt passing through a running loop. One part of a two part buckle is slidable on the first belt and has a tongue which can engage in the other part of the buckle which comprises a socket attached to a third anchorage point by a second short length of belt.

A static seat belt differs from an automatic belt in that the first belt is not attached to a retractor, but directly to an anchorage point, and has a length adjuster incorporated. Both the automatic and static safety belts are commonly referred to as three point safety belts.

In use it is important that the part of the longer length of the first belt which passes over the shoulder of the belt user i.e. the shoulder portion, passes over the shoulder of the user in the correct position relative to the user. For example the belt must not be too high in relation to the user so that it contacts the users neck, or so low that it passes over the upper part of the arm of the user. Clearly, as the anchorage points of the safety belt are fixed, the position at which the shoulder belt passes over the upper part of the belt users body will vary according to the size of the user.

The present invention seeks to provide a means whereby the position at which the shoulder belt portion of the safety belt passes over the shoulder of the user can be adjusted to the correct position.

Accordingly the present invention provides an adjustable belt for motor vehicles, arranged to engage with the shoulder portion of a three point safety belt, the adjustable belt comprising a first adjustable length of belt having a securing means at each end, the securing means enabling the adjustable belt to be attached to suitable anchorage points of a motor car, and a second adjustable length of belt attached at one end to one of said securing means and terminating in an attachment means enabling said second adjustable length of belt to be attached to said shoulder portion to locate the position of the shoulder portion correctly with respect to the wearer of the three point safety belt.

The attachment means may comprise a guide member including an open sided slot.

The guide member can include a belt retention means to retain the shoulder portion in the slot.

The first adjustable length of belt can comprise a first portion having a securing means at one end and being attached to a length adjustment means and a second portion attached to the length adjusting means and to a securing means.

The second portion can be continuous with said second adjustable length of belt and is retained against relative movement with respect to the securing means on the second portion.

The second portion of the first adjustable length of belt can pass through a slot in the securing means and the lengths of the second portion on opposite sides of the securing means can be stitched together.

The attachment means on the second length of adjustable belt can include length adjustment means.

In modified form of the adjustable belt, the first adjustable length of the belt can be continuous with the second adjustable length with length adjusting means provided on both the first and second adjustable lengths.

The present invention will now be more particularly described with reference to the accompanying drawing in which Fig. 1 shows a plan view of one form of adjustable belt according to the present invention secured in position on the back seat of a vehicle, Fig. 2 shows an elevation of the adjustable belt of Fig. 1, Fig. 3 shows the adjustable belt shown in Figs. 1 and 2 fitted to the rear seat of a motor vehicle, together with a 3-point seat belt, Fig. 4 illustrates a child using the adjustable belt and 3-point seat belt shown in Fig. 3, Fig. 5 shows in more detail the attachment of the adjustable belt to the 3-point seat belt shown in Fig. 4. Figs. 6, 7, 8, 9 show various means of attaching the adjustable belt of Figs 1 and 2 to a motor vehicle.

Referring to Figs. 1 and 2 in which an adjustable belt 10 includes a first adjustable length 12 comprising a first portion 12A one end of which is looped through a slot in a securing bracket 14 and the loose end is stitched to the main part of the portion 12A. The other end of the portion 12A passes through a length adjuster 16 which can be of any

convenient form so that the free end of the length 12 can be used to tension the adjustable length 12.

A second portion 12B is attached to the length adjuster 16 and is also attached to a securing bracket 18.

A second adjustable length 20 is also attached to the securing bracket 18 and has a guide clip 22 incorporating a length adjuster 24. The guide clip 22 has a slot 26 having an entry 28.

The adjustable belt 10 is installed in a vehicle as shown in Figs. 3 to 9 as described below, or in any other convenient and suitable manner.

Referring to Fig. 3 there is shown one side of a rear seat 30 of a vehicle (not shown). Also shown is part of a three point safety belt 32 including the shoulder belt portion 32A, lap portion 32B, short length portion 32C, running loop 32D, and a two part buckle 34.

The buckle 34 includes a tongue arranged to engage in the socket of the other part of the two part buckle. The brackets 14 and 18 are secured to the motor vehicle at convenient points as described with reference to Figs. 6 to 9. Whilst the three point safety belt 32 is not in use or when it is in use and any adjustment of the shoulder belt 32A is not required, the adjustable length 20 is stowed by attaching the guide clip 22 to the length 12A. The length 20 can also be stowed by attaching the guide clip 22 to the shoulder belt 32A if the two parts of the buckle 34 are engaged, as shown in Fig. 3.

Referring to Figs. 4 and 5, which show a child using the adult size seat belt 32, modified by the use of the adjustable belt 10, it is clear that the shoulder belt 32A would otherwise contact the child's neck. The

length of the adjustable length 20 is adjusted by operation of the length adjustment means 24 and the guide clip 22 engages the shoulder belt 32A so that the belt 32A is located in the slot 26, the length of the adjustable length 20 being adjusted so that when the guide clip is attached to the shoulder belt 32A, the shoulder belt 32A passes over the wearer in the correct position as illustrated.

The slots 26 and 28 in the guide clip 22 are arranged so that it is relatively easy to engage the guide clip with the shoulder belt and so that once the shoulder belt is located in the slot 30 it will be retained on the shoulder belt in the event of an impact.

Referring to Fig. 6 there is shown a manner in which the bracket 18 can be secured to the vehicle structure 36 using the normal anchorage point of the short length 32C of the seat belt. The short length 32C is usually anchored using a bolt 38, washer 40 and a captive nut (not shown) secured to the vehicle structure 36. To attach the bracket 18, the bolt 38 is removed and a spacer 42 is positioned between the bracket 18 and the securing bracket on the short length 32C, prior to the bolt being re-assembled on the captive nut.

Referring to Fig. 7, there is shown a manner in which the bracket 14 of the adjustable belt can be secured using the anchorage point of the running loop 32D of the seat belt 32. The running loop and the bracket are secured by a bolt 44, a spacer 46 between the running loop and the bracket, and a spacer 48 between the bracket 14 and a pillar of the vehicle structure, the bolt 44 engaging a captive nut (not shown) in the vehicle structure.

Referring to Fig. 8 the bracket 14 is shown attached to the parcel shelf 50 of the vehicle by means of a bolt 52, spacer 54, washers 56, 58 and nut 60.

Referring to Fig. 9, the bracket 14 can be secured by engagement with a hook 62 attached to a wheel arch 64 of the vehicle by a bolt 66, washer 68, spacer 70, washers 72, 74 and 76.

The hook 62 can also be bolted to the parcel shelf so that the bracket 14 does not have to be secured directly to the parcel shelf.

The arrangements for securing the bracket 14 of the adjustable belt shown in Figs. 7, 8 and 9 materially assist or actually prevent the collapse of the car seat in the event of an accident. This feature is of particular importance in estate cars that could have a lot of luggage and saloon cars that have part of the rear seat folding down.

When the hook 62 is used to anchor the bracket 14, in whatever the position the hook is located, by slackening the adjuster 16, the bracket 14 can be quickly unhooked and removed to lower the seat, or seat portion as the case may be.

In an embodiment of the invention (not shown), the two adjustable lengths 12 and 20 can be made into a continuous length secured against movement relative to the anchor bracket 18, the portion 12 having a length adjustment means incorporated within the anchorage bracket 14. In this arrangement the length adjustment means of the length 20 can be the same as that shown in Figs. 1 and 2.

Whilst the adjustable belt according to the present invention is

(particularly suited to three point safety belts for the rear seats of a motor vehicle, it can also be arranged to function with respect to the safety belts on the front seats of a motor vehicle. Also, it can be used with both static and automatic three point safety belts.

CLAIMS

1. An adjustable belt for motor vehicles arranged to engage with the shoulder portion of a three point safety belt, the adjustable belt comprising a first adjustable length of belt having a securing means at each end, the securing means enabling the adjustable belt to be attached to suitable anchorage points in a motor vehicle, and a second adjustable length of belt attached at one end to one of said securing means and terminating in attachment means enabling said second adjustable length of belt to be attached to said shoulder portion, to locate the position of the shoulder portion correctly with respect to the wearer of the three point safety belt.
2. An adjustable belt as claimed in claim 1 in which the attachment means comprises a guide member including an open sided slot.
3. An adjustable belt as claimed in claim 2 in which the guide member includes belt retention means to retain the shoulder belt portion in the open sided slot.
4. An adjustable belt as claimed in claim 1 in which the first adjustable length of belt comprises a first portion having securing means at one end and being attached to length adjustment means, and a second portion attached to said length adjustment means and to a securing means.

5. An adjustable belt as claimed in claim 4 in which said second portion is continuous with said second adjustable length of belt and is restrained against relative movement with respect to the securing means attached to said second portion.
6. An adjustable belt as claimed in claim 5 in which said second portion passes through a slot in said securing means and the lengths of this second portion and the second adjustable length are secured together.
7. An adjustable belt as claimed in claim 1 in which the attachment means includes a length adjustment means.
8. An adjustable belt as claimed in claim 1 in which the first adjustable belt is continuous with said second adjustable length of belt.
9. An adjustable belt as claimed in claim 8 in which one end of the first adjustable length of belt is attached to securing means incorporating length adjusting means.
10. An adjustable belt as claimed in claim 8 in which the first adjustable length of belt has length adjusting means intermediate its length.
11. An adjustable belt as claimed in any one of the preceding claims in which the securing means of the first adjustable length are arranged to be attached to a motor vehicle to restrain the collapse of the rear seat of the motor vehicle.

12. An adjustable belt as claimed in claim 11 in which one of said securing means is attached to the anchorage point of the running loop of the three point safety belt.
13. An adjustable belt as claimed in claim 11 in which one of said securing means is attached to the parcel shelf of a vehicle.
14. An adjustable belt in which one of said securing means is attached to a wheel arch of a vehicle.
15. An adjustable belt as claimed in claim 13 or claim 14 in which the said securing means are bolted in position.
16. An adjustable belt as claimed in claim 13 or claim 14 in which a hook is secured to the vehicle and the said securing means are arranged to engage the hook.
17. An adjustable belt as claimed in any one of the preceding claims 12 to 16 in which the other one of said securing means is attached to the anchorage point of the short length of the three point safety belt.
18. An adjustable belt constructed and arranged for use and operation substantially as herein described and with reference to Figs. 1 and 2 of the accompanying drawing.